

Date: Thursday, 11/15/2007 7:34:37 AM  
 User: Kim Johnston

## Process Sheet

51

Customer : CU-DAR001 Dart Helicopters Services Drawing Name : 350/355 AS X-TUBE AFT UNDER REVIEW  
 Job Number : 35736  
 Estimate Number : 12486  
 P.O. Number :  
 This Issue : 11/15/2007 S.O. No. :  
 Prsht Rev. : NC Part Number : D350748201  
 First Issue : / / Type : LANDING GEAR Drawing Number : N/A UNDER REVIEW N/A  
 Previous Run : 35735 Project Number : N/A  
 Drawing Revision : N/A REV 6 11/15/15  
 Material :  
 Due Date : 12/21/2007 Qty: 1 Um: Each  
 Written By :  
 Checked & Approved By :  
 Comment : Est Rev: A New Issue 06-07-05 JLM  
 Est Rev: B Update qty of MS21042L5 06-09-12 KJ

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 DC DOCUMENT CONTROL



Comment: Photocopy bluefile & type labels per PPPD350-748-201 CHG001 S 09/04/15

2.0 35736A X-TUBE AS 350/355 HI AFT UNDER REVIEW



Comment: Sub-Component X-TUBE AS 350/355 HI AFT  
 D350-748-241 B 35736A

3.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1  
 Pick Packing Kit

4.0 D35001 350 SADDLE



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)  
 350 SADDLE  
 Batch: B32203 3X 353151X

5.0 D35011 BUSHING



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)  
 BUSHING  
 Batch: 32204

11/15/15 (1)

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 11/15/2007 7:34:37 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT UNDER REVIEW

Job Number: 35736

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Bolt

Batch: M105810

7.0

AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

bolt

Batch: M105940

8.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: M106519

9.0

AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s)

Washer

Batch: M106780

10.0

AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: M107008

11.0

MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

Nut

Batch: M106625

12.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: M106785

PC 8/9/15 (U)

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 11/15/2007 7:34:37 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT UNDER REVIEW

Job Number: 35736

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



Comment: INSPECT 100% KITS FOR COMPLETENESS

5 006415 @

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-201

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

A

8/4/15

SP

(14)

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/04/15

Job Completion



MF 08-04-15

B35736

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 11/15/2007 7:34:45 AM  
 User: Kim Johnston

## Process Sheet

51

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : X-TUBE AS 350/355 HI AFT UNDER REVIEW
Job Number : 35736A	
Estimate Number : 12483	
P.O. Number :	Part Number : D350748241
This Issue : 11/15/2007 S.O. No. :	Drawing Number : D350-748-241 U/R <i>REV D</i>
Prsht Rev. : NC	Project Number : N/A
First Issue : 1/1 Type : LANDING GEAR	Drawing Revision : <i>8 D</i> <i>11/21/15</i>
Previous Run : 35735A	Material :
Written By :	Due Date : 12/21/2007 Qty: 1 Um: Each
Checked & Approved By :	
Comment : Est Rev: A New Issue 06-07-05 JLM	
Est Rev: B Update cadplate process 06-09-12 KJ	

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D350-748-241 CHG001

*N/A*

2.0	D6018125	Crosstube Material
-----	----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Crosstube Material

D6018-125

2.299" OD X 2.000" ID

Batch: *B 27472**J.F. 07/12/02*

①

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand &amp; install plugs on both ends as per Folio FA647

2-Turn first side as per Folio FA647

3-Deburr &amp; Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241.

*J.F. 07/12/02*

①

4.0	QC1	INSPECT ALL DIM TO DIM SHEET
-----	-----	------------------------------



Comment: INSPECT ALL DIM TO DIM SHEET

*J.F. 07/12/02*

①

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



Date: Thursday, 11/15/2007 7:34:45 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 35736A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA647

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241.

3-Scribe part # as per Dwg D350-748-241

J.F. 07/12/02 ①

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

J.F. 07/12/02 ①

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

85 07/12/03

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Remove all Machining Marks

AWM 07-12-04

9.0

OUTSIDE SERV.10

OUTSIDE SERVICES -LG



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: 5266

Heat Treat to min 180 KSI As per Dwg D350-748-241

Sand Blast tube after Heat Treat

Possible Supplier: Vac Aero

Ensure Certificate of Conformity is attached

C207/12/12 ①

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformaty is attached

12/1/10 ①

11.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

5 08/01/11 ①

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 11/15/2007 7:34:45 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 35736A

Part Number: D350748241

Job Number



Seq. #: Machine Or Operation: Description:

12.0 HAND FINISHING1 HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1  
Oil inside of tube with LPS-3.

A/R LPS-3

Batch:

*N/A* *2 m-l* *08/03/04* *(X)*

13.0 BENDING BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT *N/A* *EL/SD 8-1-18*

14.0 QC15 DIMENSIONAL CHECK OF X-TUBES



Comment: DIMENSIONAL CHECK OF X-TUBES

*08-01-24* *(1)*

15.0 LANDING GEAR 1 LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Remove all marks from tube within limits of D350-748-241

*- AWM 8-2-25*

2-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs,  
Set-up drill table as per QSI 010

3-Deburr

4-Engrave Part # and Batch # as per Dwg D350-748-241

*JP*

*8-2-4*

16.0 QC6 DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

*08/03/04* *(1)*

17.0 OUTSIDE SERV.10 OUTSIDE SERVICES -LG



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: *5847*

*0208/03/07* *(1)*

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 11/15/2007 7:34:45 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 35736A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

18.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

*PC 8/4/7 (1)*

19.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*080610780*

20.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

*RT 08-04-08*

2-Paint Outside of Tube as per Dart QSI 005 4.2

*ml 08 04 10 (1)*

21.0

QC14

INSPECT SPRAY PAINT



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

*RT 08-04-11*

22.0

D35021

SUPPORT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

SUPPORT

Batch: *35783*

*ml 08 04 11*

23.0

D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total : 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: *35900*

*ml 08 04 11*

24.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Insert

Batch: *100621*

*ml 08 04 11*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>Customer</b>	: CU-DAR001	Dart Helicopters Services	<b>Drawing Name</b>	: X-TUBE AS 350/355 HI AFT	UNDER REVIEW
<b>Job Number</b>	: 35736A				
<b>Estimate Number</b>	: 12483				
<b>P.O. Number</b>	:		<b>Part Number</b>	: D350748241	
<b>This Issue</b>	: 04/04/2008	<b>S.O. No.</b> :	<b>Drawing Number</b>	: D350-748-241 U/R	
<b>Prsht Rev.</b>	: NC		<b>Project Number</b>	: N/A	
<b>First Issue</b>	: 15/11/2007	<b>Type</b> :	<b>Drawing Revision</b>	: C	
<b>Previous Run</b>	: 35735A		<b>Material</b>	:	
<b>Written By</b>	:	_____	<b>Due Date</b>	: 21/12/2007	<b>Qty:</b> 1 <b>Um:</b> Each
<b>Checked &amp; Approved By</b>	:	_____			
<b>Comment</b>	:	Est Rev: A New Issue 06-07-05 JLM			
		Est Rev: B Update cadplate process 06-09-12 KJ			

## Job Number:



Seq. #:

**Machine Or Operation:**

**Description :**

28.0

## CROSSTUBES

CROSSTUBES RESOURCE 1



**Comment:** LANDING GEAR RESOURCE 1

1-Install Ground wire Insert,then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241,Torque to 60-80 IN-LBS

**REFERENCE ONLY**

ml 08 04 11 (1)

## Job Completion



Date: Thursday, 11/15/2007 7:34:45 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 35736A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Washer

Batch: 107534

ml 08 04 11

26.0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: 106484

ml 08 04 11

27.0

MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Screw

Batch: 18836

ml 08 04 11

28.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert, then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

ml 08 04 11 (1)

29.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

08/04/15 (X1)

30.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-241

Location:

PPP Rev: PPD 35736

AS 08/04/15 (X1)



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

Date: Thursday, 11/15/2007 7:34:45 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT UNDER REVIEW

Job Number: 35736A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

31.0

QC21

FINAL INSPECTION/W/O RELEASE



08/04/15 *[Signature]*

Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



MF 08-04-15

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

<b>DART AEROSPACE LTD</b>	<b>Work Order:</b>	35736A
<b>Description:</b> Crosstube Assembly (AS350/355 High Aft)	<b>Part Number:</b>	D350-748-241
<b>Inspection Dwg:</b> D350-748-241 <b>Rev:</b> D		Page 1 of 1

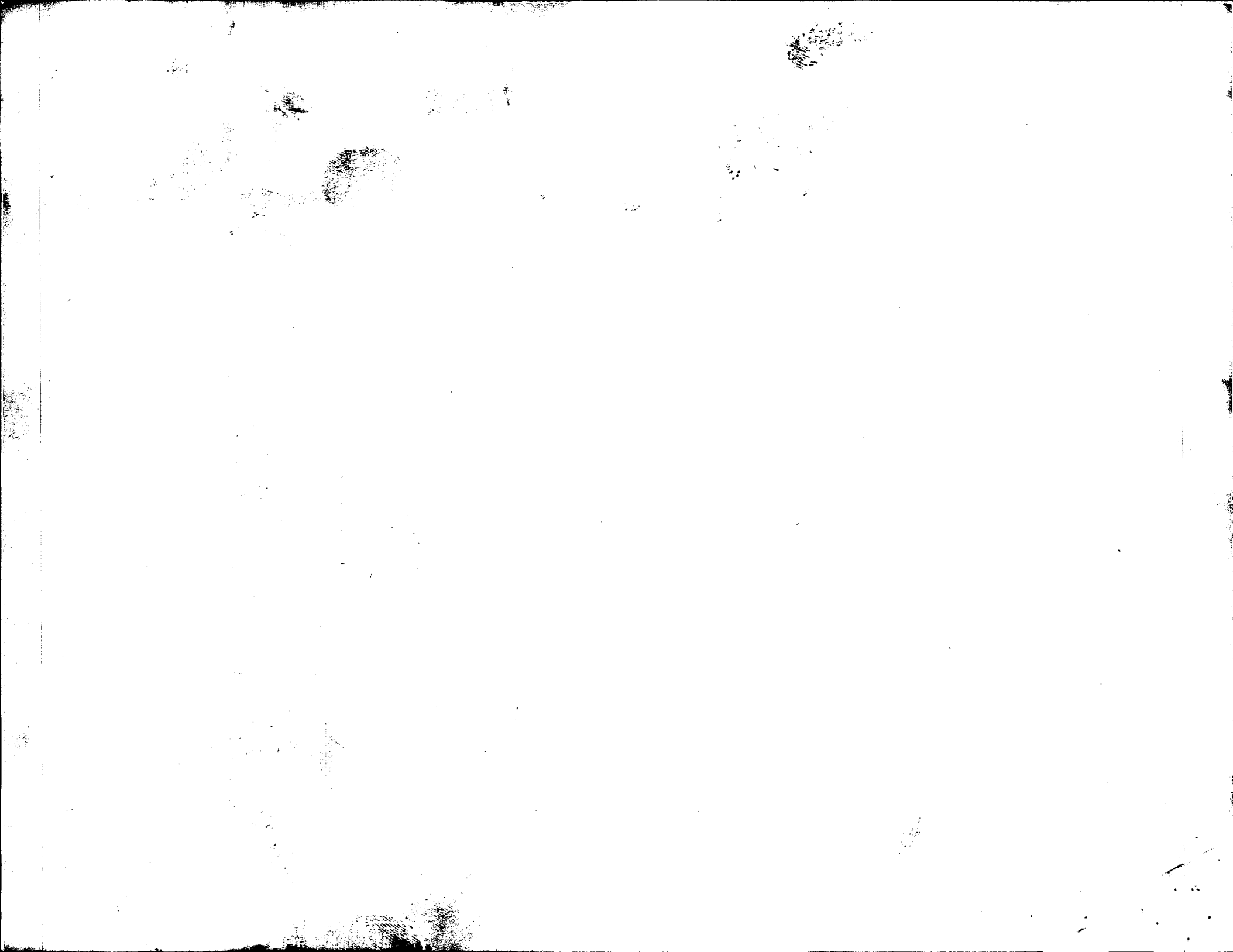
### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.244"	✓			
	2.180	+0.005/-0.000	2.184"	✓			
	2.180	+0.005/-0.000	2.183"	✓			
	2.208	+0.005/-0.000	2.210"	✓			
	2.234	+0.005/-0.000	2.236"	✓			
	2.253	+0.005/-0.000	2.255"	✓			
	2.272	+0.005/-0.000	2.276"	✓			
	2.299	+0.005/-0.000	2.302"	✓			
	0.063	+/-0.010	0.073"	✓			
	4.26	+/-0.030	4.273"	✓			
	R0.063	+/-0.010	R0.063"	✓			
	R0.50	+/-0.030	R0.500"	✓			
SIDE B	2.240	+0.005/-0.000	2.245"	✓			
	2.180	+0.005/-0.000	2.185"	✓			
	2.180	+0.005/-0.000	2.185"	✓			
	2.208	+0.005/-0.000	2.213"	✓			
	2.234	+0.005/-0.000	2.237"	✓			
	2.253	+0.005/-0.000	2.254"	✓			
	2.272	+0.005/-0.000	2.274"	✓			
	2.299	+0.005/-0.000	2.299"	✓			
	0.063	+/-0.010	0.073"	✓			
	4.26	+/-0.030	4.283"	✓			
	R0.063	+/-0.010	R0.063"	✓			
	R0.50	+/-0.030	R0.500"	✓			
	122.70	+/-0.060	122.700"	✓			

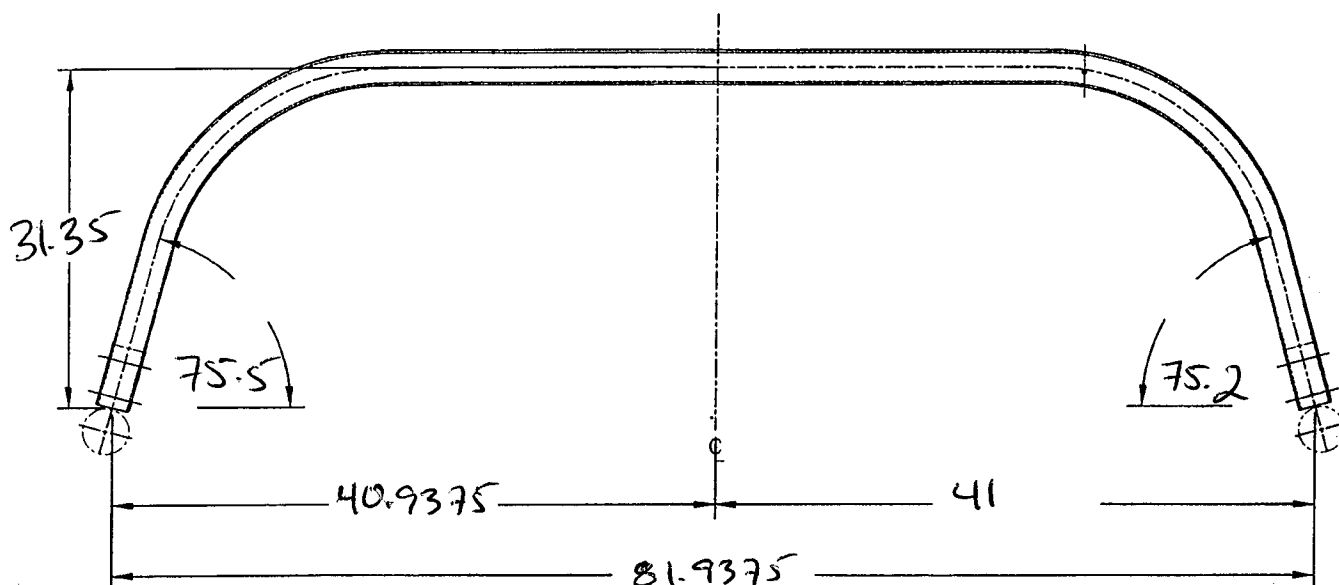
<b>Measured by:</b> JF	<b>Audited by:</b> JAS	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 07/12/02	<b>Date:</b> 07/12/03	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	07.01.17	New Issue (P/O D350-748-201)	KJ/JLM	



DART AEROSPACE LTD		Work Order:	35736A
Description: Crosstube High Aft (AS350/355)		Part Number:	D350-748-201
Inspection Dwg: D350-748-241 Rev: D		Page 1 of 1	

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06



Comments

QC15 Inspection	<i>[Signature]</i>
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM <i>[Signature]</i>	<i>[Signature]</i>



**DART**

DESIGN 92	DRAWN BY 92	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED H	APPROVED H	DRAWING NO. D350-748-241	REV. D SHEET 1 OF 3
DATE 06.10.31		TITLE CROSSTUBE (AS 350/355 HI AFT)	SCALE NTS
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6018-125 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	
D	06.10.31	MAG. PARTICLE AND CAD PLATE AS MFD.	

**RELEASED**

06.10.31 H

QTY	P/N	DESCRIPTION
X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
1	D6018-125	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

**D350-748-141 CROSSTUBE:**

- 1) MATERIAL: MANUFACTURED FROM D6018-125 OR D6015-125  
FINISHED LENGTH =  $122.70 \pm 0.06$
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING.
- 6) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2  
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR  $\varnothing 0.297$  HOLE.

**UNDER REVIEW**

07.02/16 H

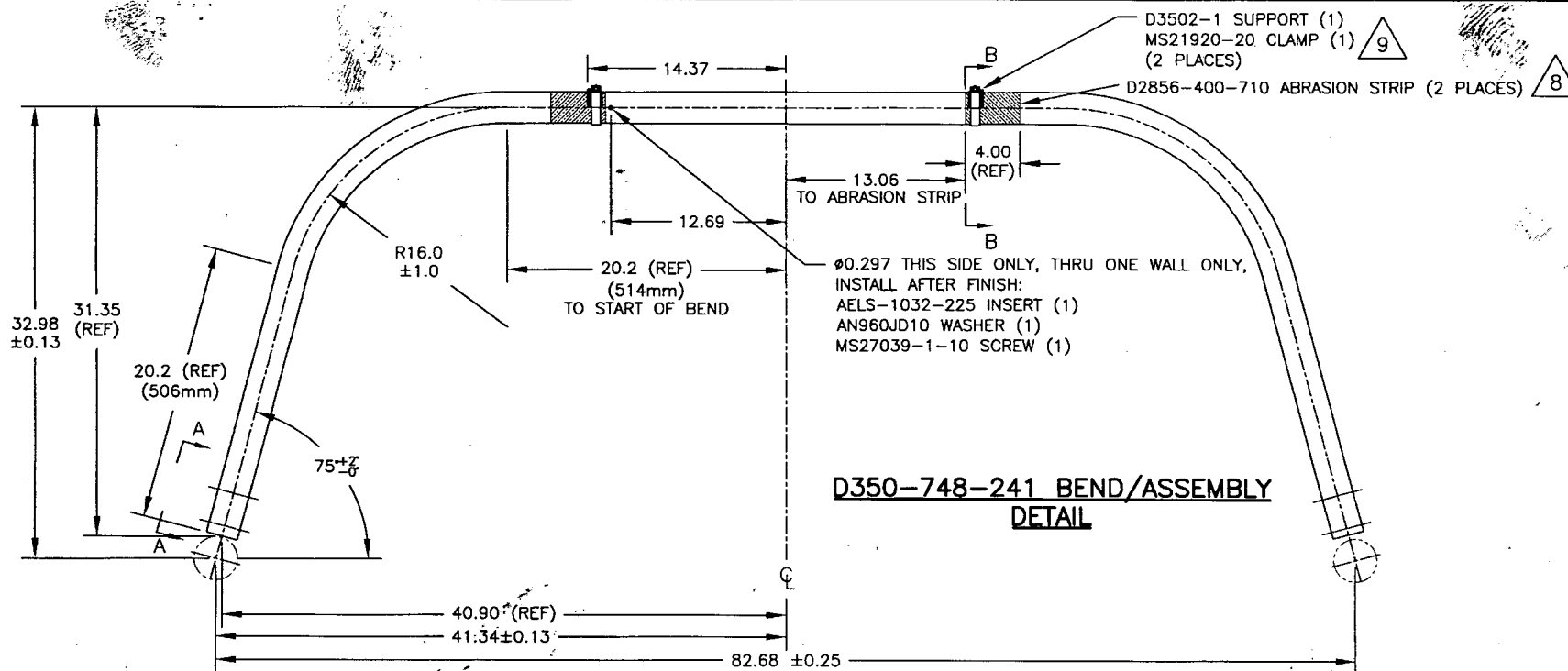
CUT FROM REDUCED  
OK 07.10.22

Copyright © 2006 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

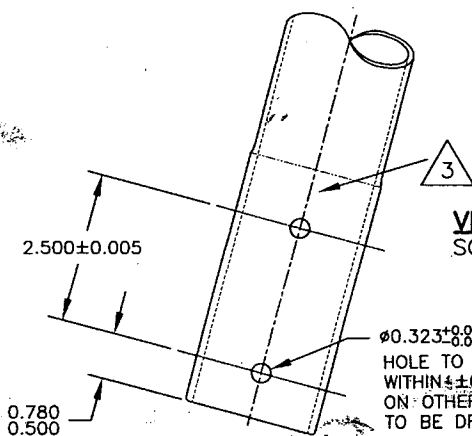
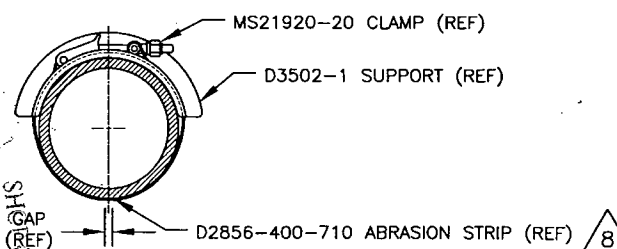






**D350-748-241 BEND/ASSEMBLY  
DETAIL**

**SECTION B-B  
SCALE 1:2**



**VIEW A-A  
SCALE 1:2**

Ø0.323 ±0.005 (THRU, TYP)  
HOLE TO BE ALIGNED  
WITHIN ±0.001 OF HOLE  
ON OTHER SIDE OF CUFF,  
TO BE DRILLED AFTER BENDING

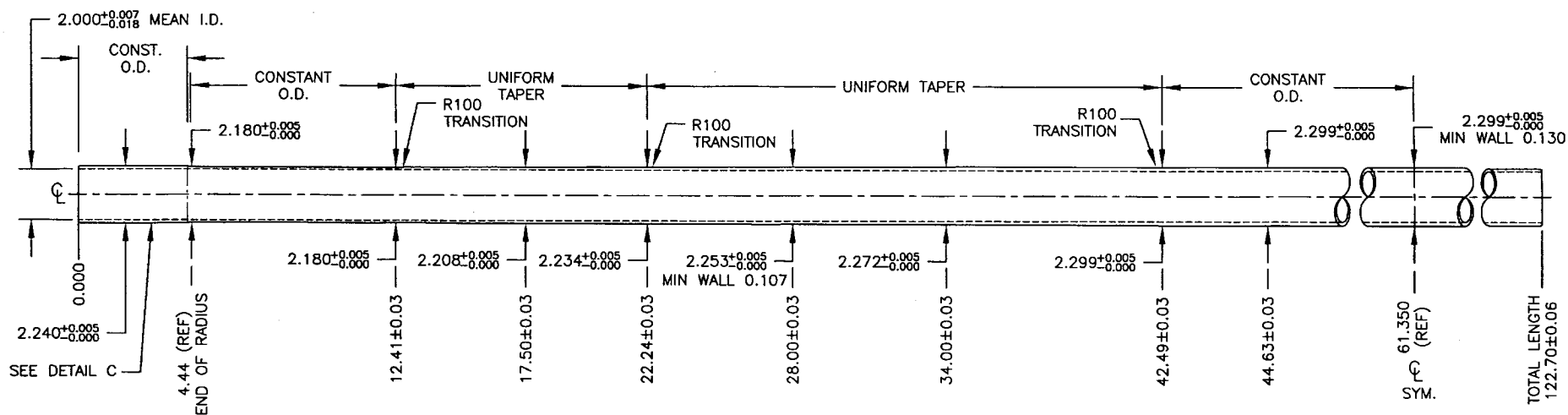
UNCONTROLLED COPY  
ENGINEERING  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
NO. 303030A  
RETURN TO  
SHO COPY  
REF

**UNDER REVIEW**  
07.02/16  
CUFF (2 PLACES)  
Ø 0.717 IN 22  
**RELEASED**  
06.10.31

COPYRIGHT © 2006 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL  
AND IS SUPPLIED ON THE EXPRESS CONDITION  
THAT IT IS NOT TO BE USED FOR ANY PURPOSE  
OR COPIED OR COMMUNICATED TO ANY OTHER  
PERSON WITHOUT WRITTEN PERMISSION FROM  
DART AEROSPACE LTD.

DESIGN	90	DRAWN BY	90	<b>DART</b>	DART AEROSPACE LTD. HARRISBURG, ONTARIO, CANADA
CHECKED	#	APPROVED	#	DRAWING NO.	REV. D
DATE	06.10.31			D350-748-241	SHEET 2 OF 3
				TITLE	SCALE
				CROSSTUBE (AS 350/355 HI AFT)	1:8

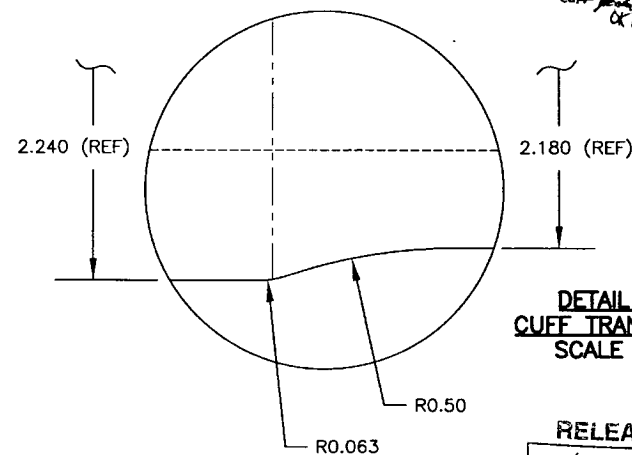
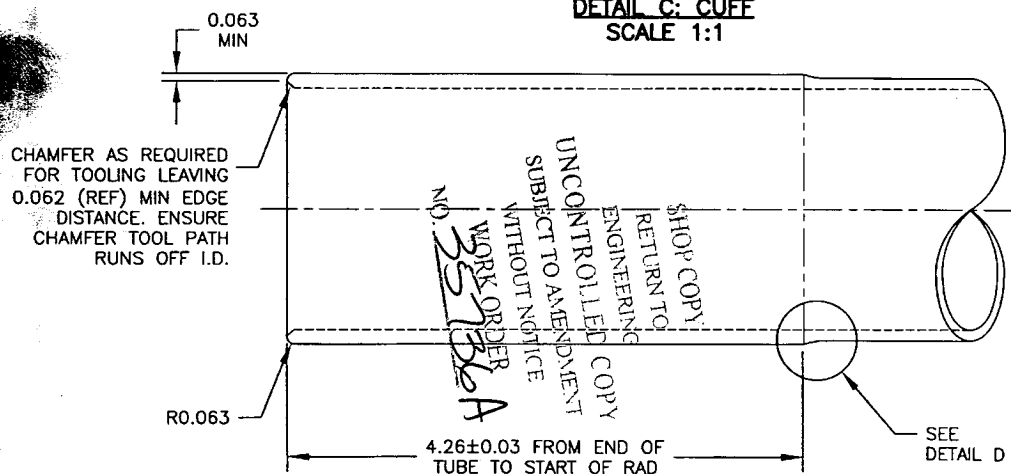


# **D350-748-241 MACHINING DETAIL**

**UNDER REVIEW**

07.02/16/11  
DART Aerospace Ltd.  
06.10.31

## **DETAIL C: CUFF SCALE 1:1**



COPYRIGHT © 2006 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DESIGN	q7	DRAWN BY	q7	<b>DART</b>	DART AEROSPACE LTD. HAMMERSLEY, ONTARIO, CANADA
CHECKED	#	APPROVED	#	DRAWING NO. D350-748-241	REV. D SHEET 3 OF 3
DATE	06.10.31	TITLE	CROSSTUBE (AS 350/355 HI AFT)	SCALE	1:4



**VAC AERO**  
INTERNATIONAL INC.

GST No.: R105468102

OAK 94195-1



HEAD OFFICE  
1371 SPEERS ROAD, OAKVILLE, ONTARIO  
CANADA L6L 2X5  
TEL: (905) 827-4171 FAX: (905) 827-7489



2009 WYECROFT ROAD, UNIT B  
OAKVILLE, ONTARIO  
CANADA L6L 6J4  
TEL: (905) 827-7377 FAX: (905) 827-1380



QUEBEC DIVISION  
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC  
CANADA H4S 1C5  
TEL: (514) 334-4240 FAX: (514) 334-6269

01/07/2008

MM / DD / YYYY

PAGE: 1

BILL TO: 1DAR01  
DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.  
1270 ABERDEEN ST.  
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
01/07/2008		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
5266		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-748	-141	EA	10	10	
Process Specifications: Procedure: 4353 HEAT TREATED TO 180 KSI MIN. PER AMS 2759-1D 100% HARDNESS CHECKED AS PER ASTM E-18 HRC 40-45 MATERIAL: 4130 SAND BLASTED  D350748141B357-27A, 28A, 29A, 30A, 31A D350748241B357-32A, 33A, 34A, 35A, 36A  NOTE: NO SERIAL NUMBERS FOUND ON PARTS					

100% HARDNESS TESTED

Qty: 10 Pcs

42/43 HRC 07 Jan 08



I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

Authorized Q.C. Inspector



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT  
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



HEAT TREATING



**CERTIFICATE OF  
CONFORMANCE**

**CADORATH PLATING CO. LTD.  
2150 LOGAN AVENUE  
WINNIPEG, MANITOBA R2J-0J1**

**DATE: Mar-29-2008**

**CONSIGNED TO: Dart Aerospace Ltd.  
1270 Aberdeen St.  
Hawksbury, ON K6A 1K7**

**W/O #: 74721**

**INVOICE #: 38606**

**CONTRACT OR  
PURCHASE ORDER # 5847**

**DESCRIPTION: SKID**

**QTY 1**

**P/N # D350748241**

**S/N # B35736A**

**CADMIUM PLATE IAW AMS-QQ-P-416 TYPE 2 CLASS 1. MPI IAW  
ASTM-E-1444. HEAT CHART #8933 & #8983.**

**CERTIFICATE: I certify that the items indicated here on have  
been inspected and tested and conform to all specifications  
and requirements detailed on the contract or purchase order.**

**Approved Inspector:**

*William Maruszynski*

